FIG.1

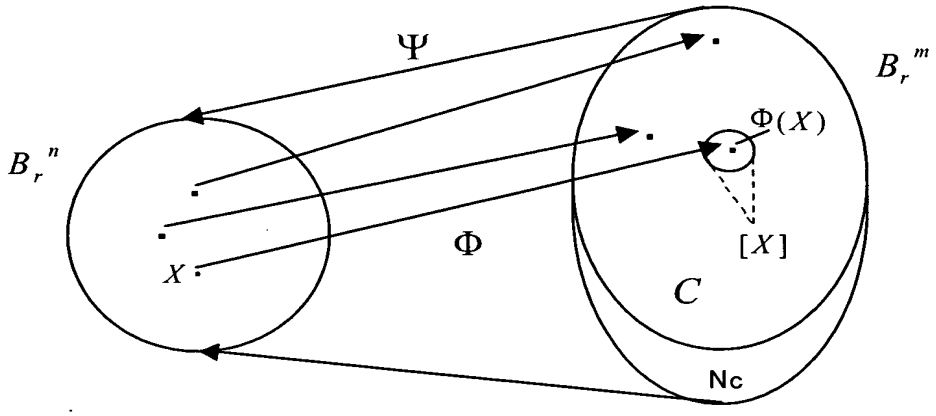


FIG.2

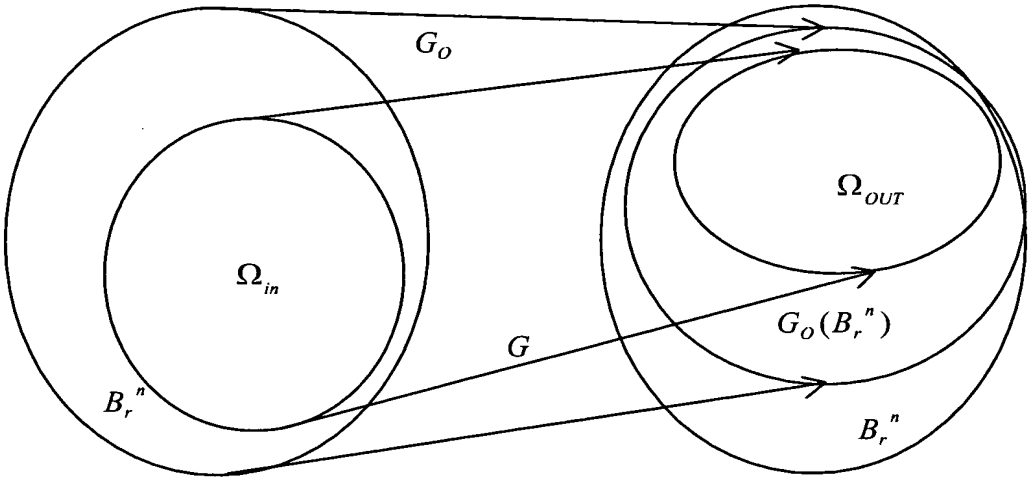


FIG.3

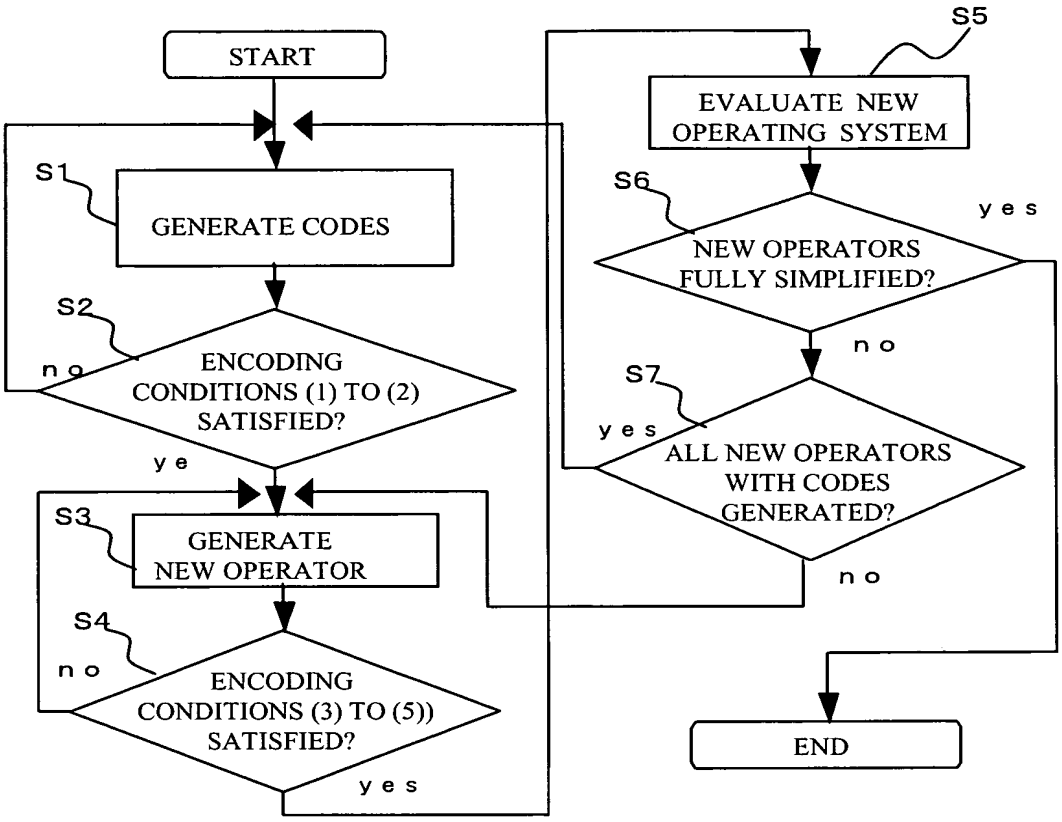
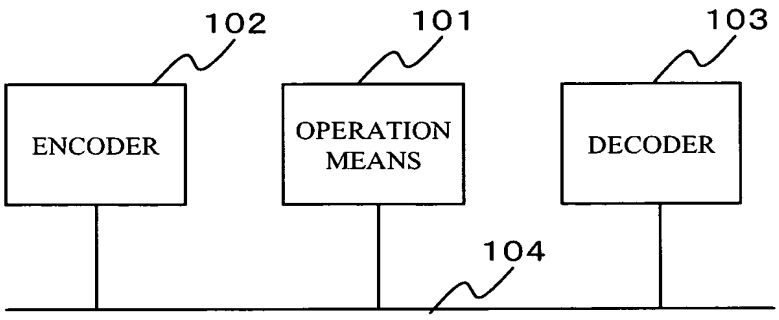


FIG.4



OPERATION DEVICE 100

FIG.5

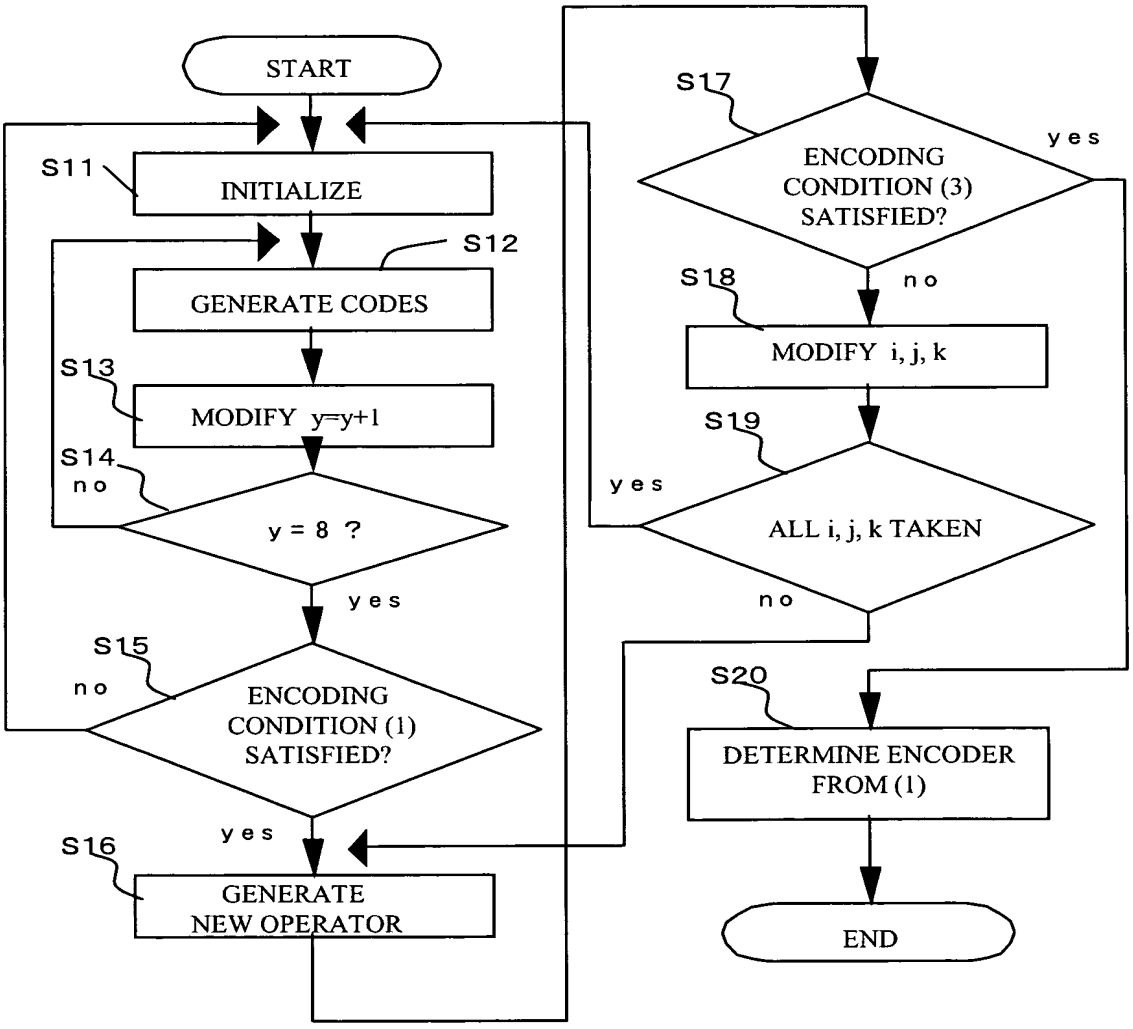


FIG.6

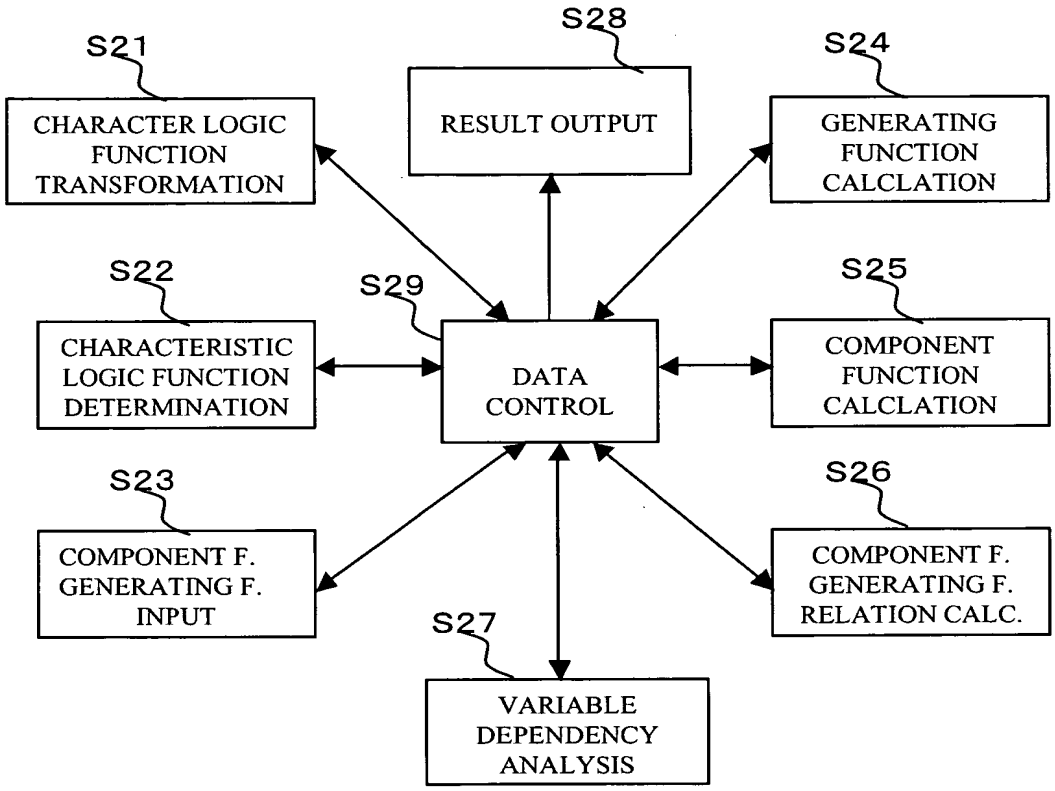


FIG.7

$Z' = F^1(X,Y)$		Y			
		00	01	10	11
X	00	011	110	000	101
	01	110	111	110	110
	10	000	110	000	111
	11	101	110	111	101

FIG.8

$Z' = F^2(X',Y')$		Y							
		000	001	010	011	100	101	110	111
X'	000	010	001	110	100	001	100	110	010
	001	001	011	100	001	100	101	011	101
	010	110	100	010	001	100	001	010	110
	011	100	001	001	100	001	100	001	100
	100	001	100	100	001	100	001	100	001
	101	100	101	001	100	001	011	101	011
	110	110	011	010	001	100	101	000	111
	111	010	101	110	100	001	011	111	000

FIG.9

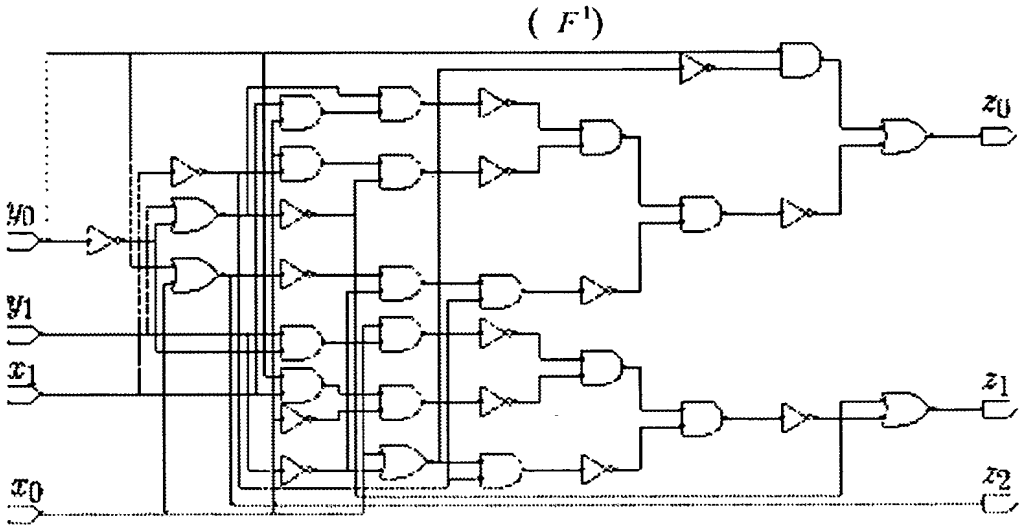


FIG.10

(F^2)

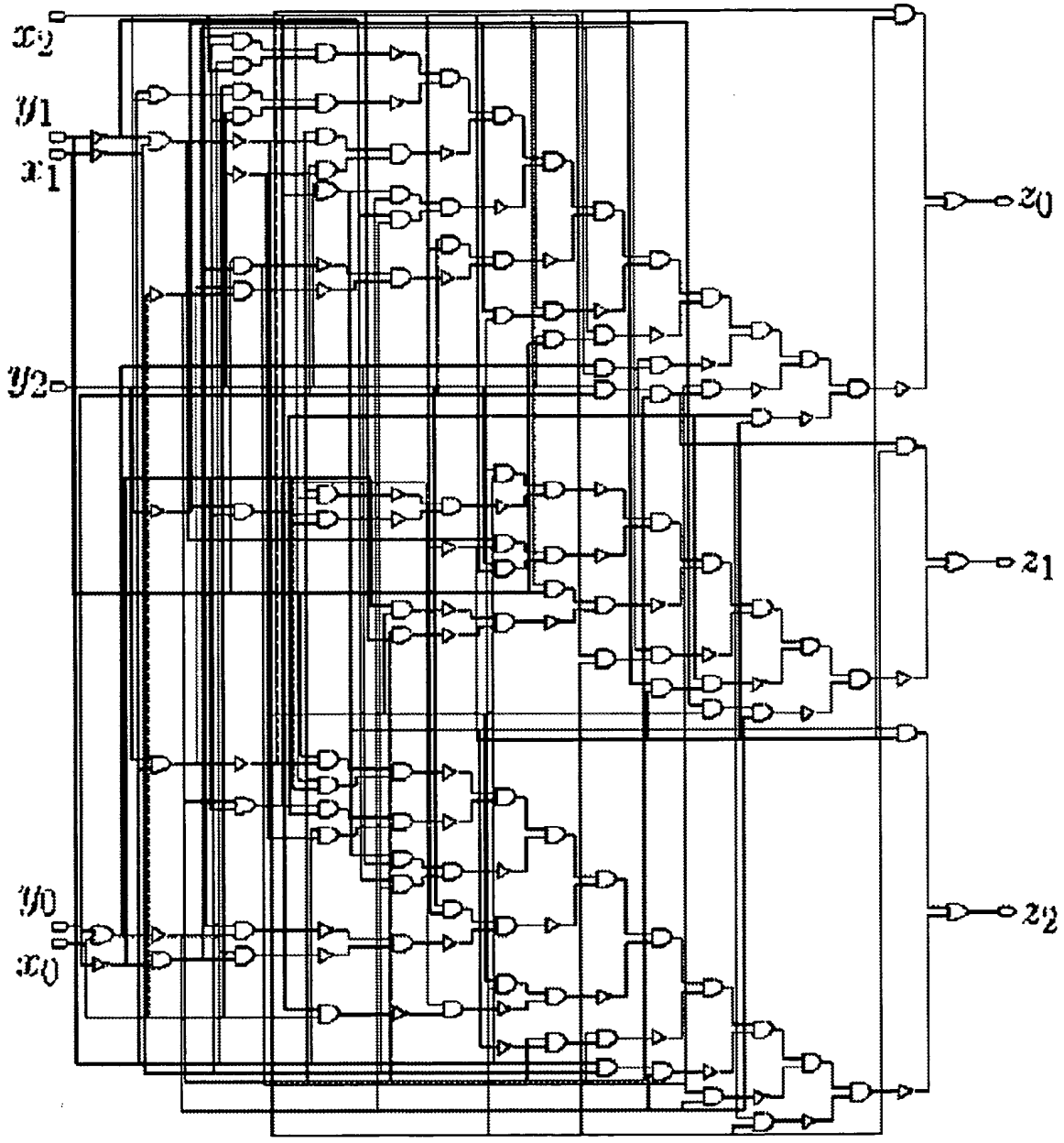


FIG.11

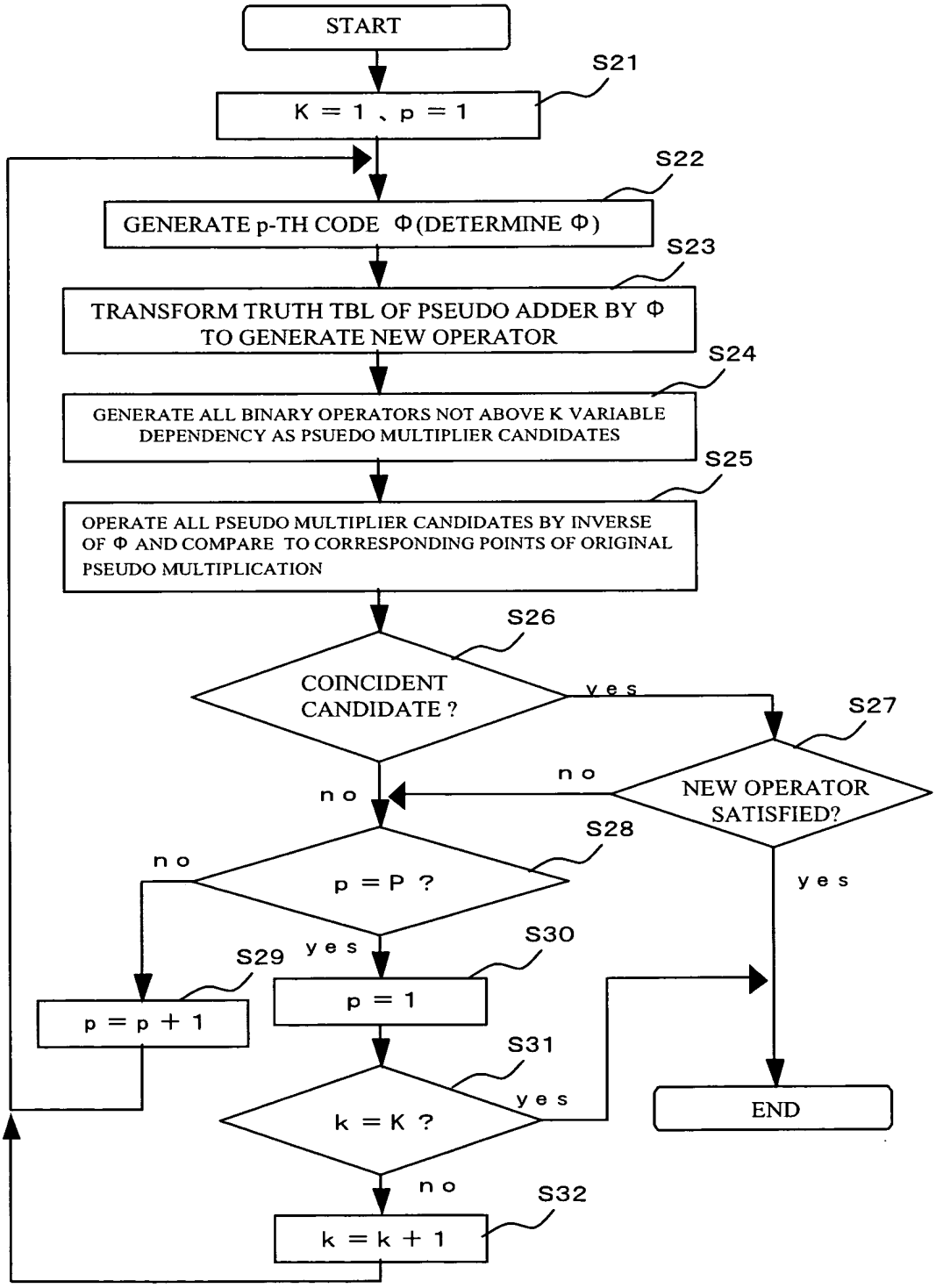


FIG.12

$Z' = F'_N(X', Y')$		Y'							
		000	001	010	011	100	101	110	111
X'	000	000	100	000	100	010	110	010	110
	001	100	000	100	000	110	010	110	010
	010	000	100	001	101	010	110	011	111
	011	100	000	101	001	110	010	111	011
	100	010	110	010	110	010	110	010	110
	101	110	010	110	010	110	010	110	010
	110	010	110	011	111	010	110	011	111
	111	110	010	111	011	110	010	111	011

FIG.13

X'	$\Phi(X')$
000	011
001	100
010	111
011	001
100	101
101	000
110	110
111	010

FIG.14

$Z' = F^2_N(X', Y')$

X' \ Y'	000	001	010	011	100	101	110	111
000	001	101	001	101	000	100	000	100
001	101	101	101	101	100	100	100	100
010	001	101	011	111	000	100	010	110
011	100	000	101	001	110	010	111	011
100	101	101	111	111	100	100	110	110
101	100	100	100	100	101	101	101	101
110	000	100	010	110	001	101	011	111
111	100	100	110	110	101	101	111	111

FIG.15

X'	$\Psi(X')$
000	101
001	011
010	111
011	001
100	001
101	100
110	110
111	010

FIG.16

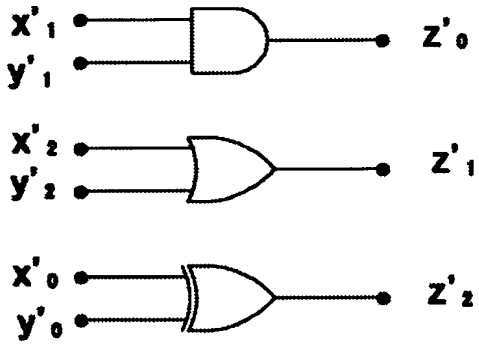


FIG.17

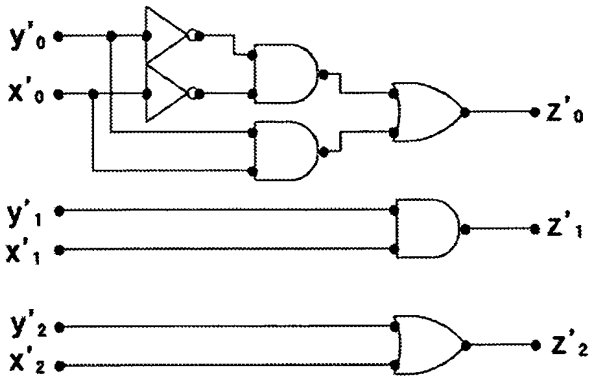


FIG.18

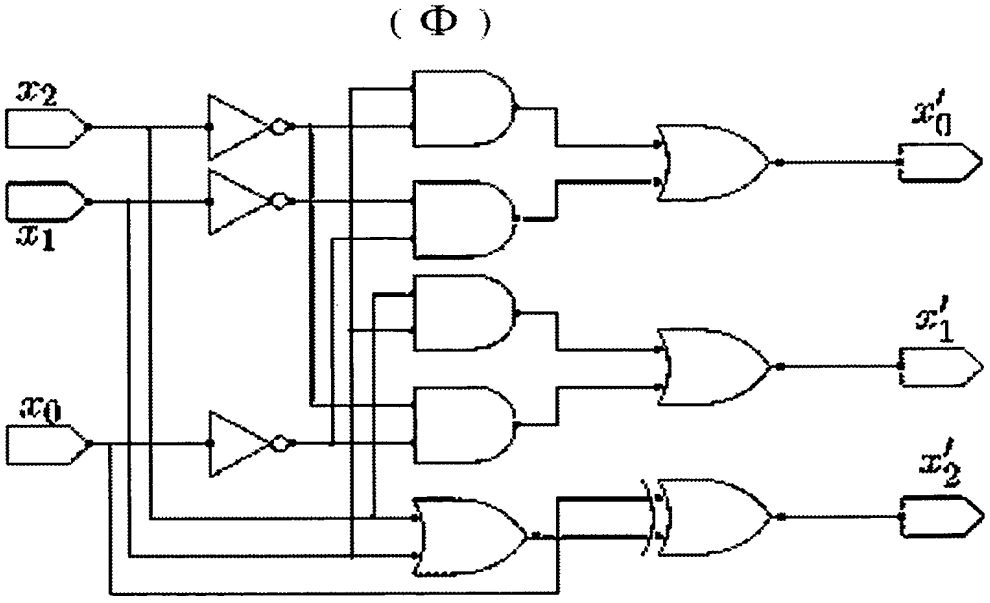


FIG.19

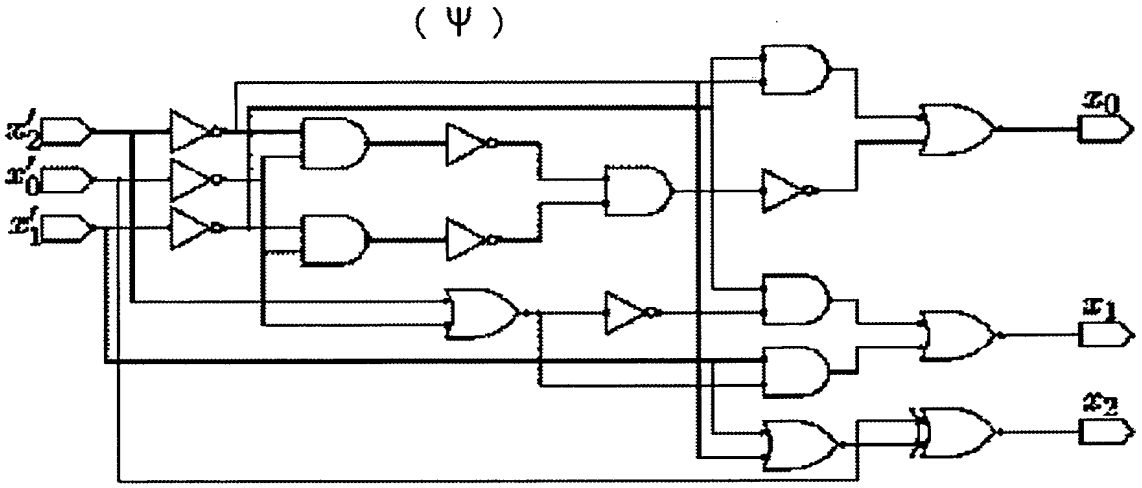


FIG.20

		ELEMENT NUMBER	DELAY TIME
ORIGINAL	F^1	□^{1} =57□	△^{1} =13△
	F^2	□^{2}=267□	△^{2} =29△
NEW OPERATION SYS.	$F^1{}_N$	□$^1{}_N$= 2□	△$^1{}_N$= 6△
	$F^2{}_N$	□$^2{}_N$=12□	△$^2{}_N$= 5△
	Φ	□$_\Phi$ =21□	△$_\Phi$ = 5△
	Ψ	□$_\Psi$ =31□	△$_\Psi$ =10△

FIG.21

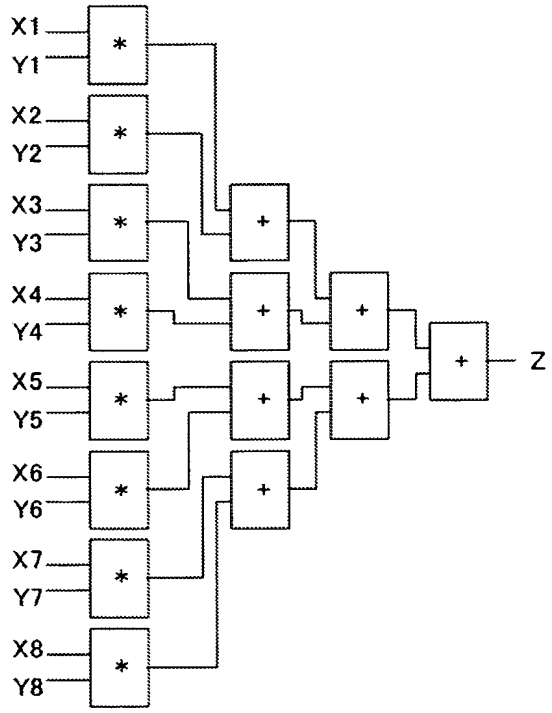


FIG.22

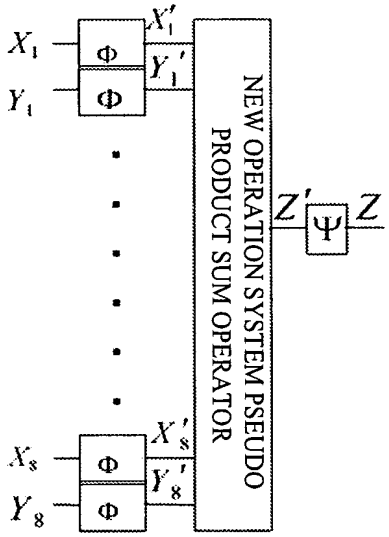


FIG.23

X	$G^1(X)$
00	00
01	00
10	01
11	11

X	$G^2(X)$
00	00
01	00
10	01
11	10

FIG.24

$\widetilde{G}^1(Y, X)$

	X^0	X^1	X^2	X^3
Y^0	1	1	0	0
Y^1	0	0	1	0
Y^2	0	0	0	0
Y^3	0	0	0	1

$\widetilde{G}^2(Y, X)$

	X^0	X^1	X^2	X^3
Y^0	1	1	0	0
Y^1	0	0	1	0
Y^2	0	0	0	1
Y^3	0	0	0	0

FIG.25

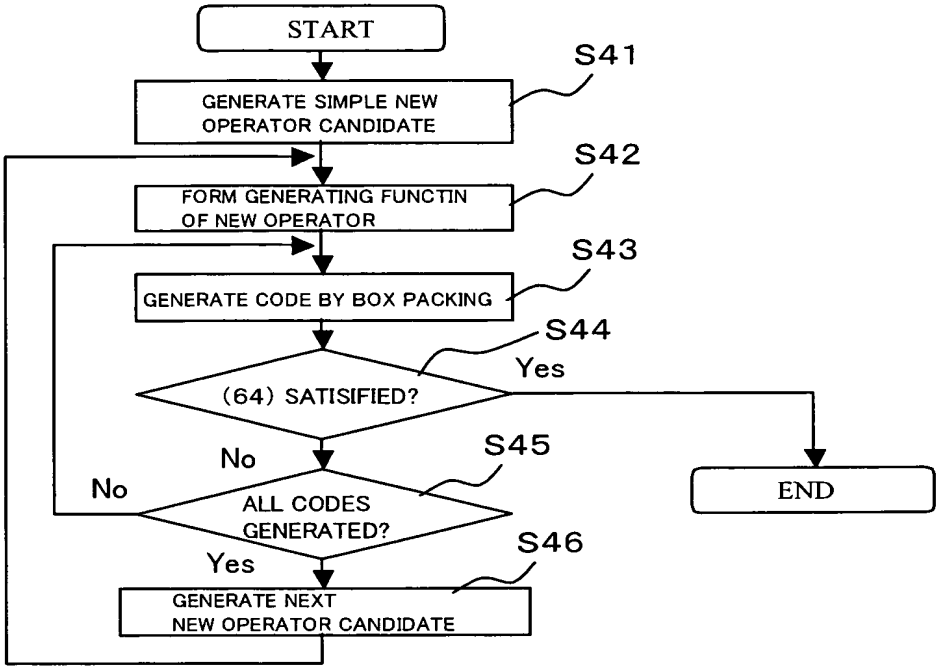


FIG.26

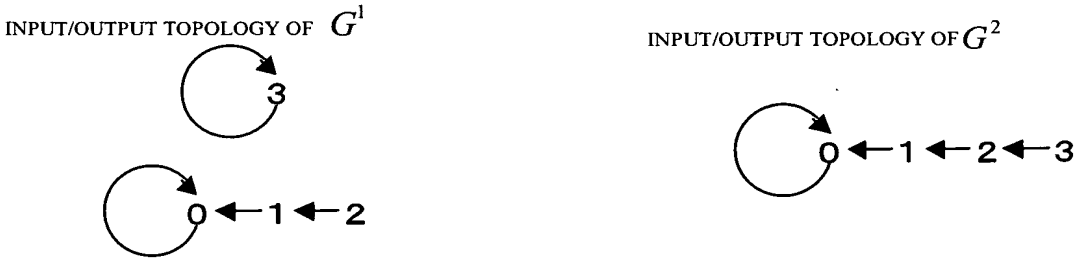
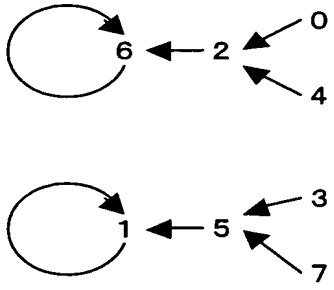


FIG.27

INPUT/OUTPUT TOPOLOGY OF $G^1{}_N$



INPUT/OUTPUT TOPOLOGY OF $G^2{}_N$

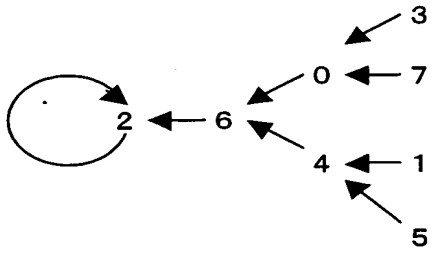
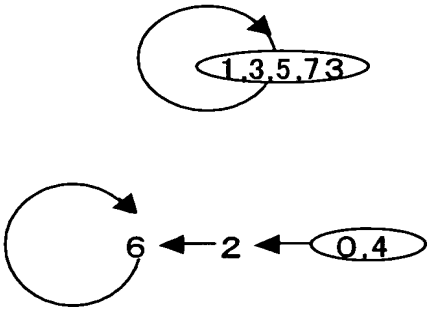


FIG.28

TIED INPUT/OUTPUT TOPOLOGY OF $G^1{}_N$



TIED INPUT/OUTPUT TOPOLOGY OF $G^2{}_N$

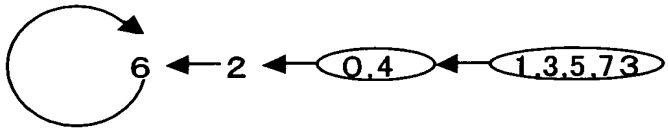


FIG.29